

# Games and Puzzles to Boggle the Mind

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## Problem

Alterations in memory have been associated with the aging process.

## Question

Can older adults benefit from memory enhancement exercises?

## Method

Replication study based on the research done by Palker, N., Barr-Silk, M., and Lender, N. (2004) was conducted.

- ❖ Participant consent and IRB approval was obtained prior to the study.
- ❖ This study took place over a five week period with each session lasting one hour.
- ❖ Each session consisted of a different game or puzzle activity geared to stimulate memory enhancement.

## Data Collection

- ❖ A pre-test was given at the beginning of the first session consisting of an objective and a subjective section .
- ❖ A post-test, identical to the pre-test, was administered the week following the last game.
  - Subjective test: six questions which were used in the original study
  - Objective memory tests: seven-word list, recognizing five faces, and recalling details of a picture. Alterations were made in the content because the original tests were not available.
    - Participants were given thirty seconds each for the seven-word list and recognizing five faces. One minute was allowed for recalling details from the picture.



Pre and Post Test Questions

1. How often do you forget where you put things?
2. How often do you need to check whether you have done something that you meant to do (eg, lock the door, turn on the lights, turn off the oven)?
3. How often have you forgotten something you were supposed to do (eg, take your keys with you when you're about to drive the car)?
4. How often do you forget something that you were told yesterday or a few days ago, and needed to be reminded of it?
5. How often do you find that a word or a name is "on the tip of your tongue" but you can't remember it if you need to?
6. How often have you forgotten to tell someone something important (eg, to pass on a message, to send a reminder)?

## Sample

- ❖ Residents from an assisted living facility volunteered to participate; an average of 10 residents participated weekly.
- ❖ Three female volunteers ages ranging from 55-98 completed both the pre- and post-tests.
- ❖ Specific criteria for exclusion was not identified due to low number of participants.

## Design

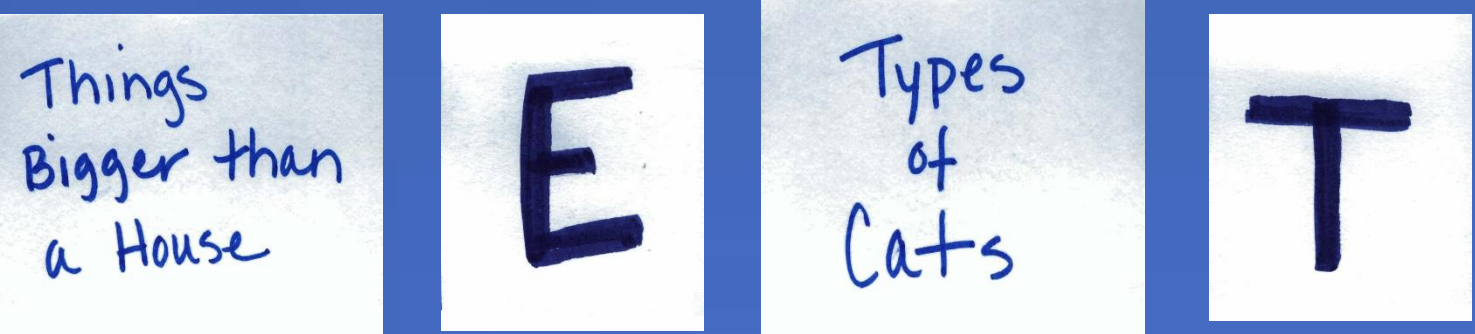
- ❖ Quasi-experimental with a convenience sample

## Setting

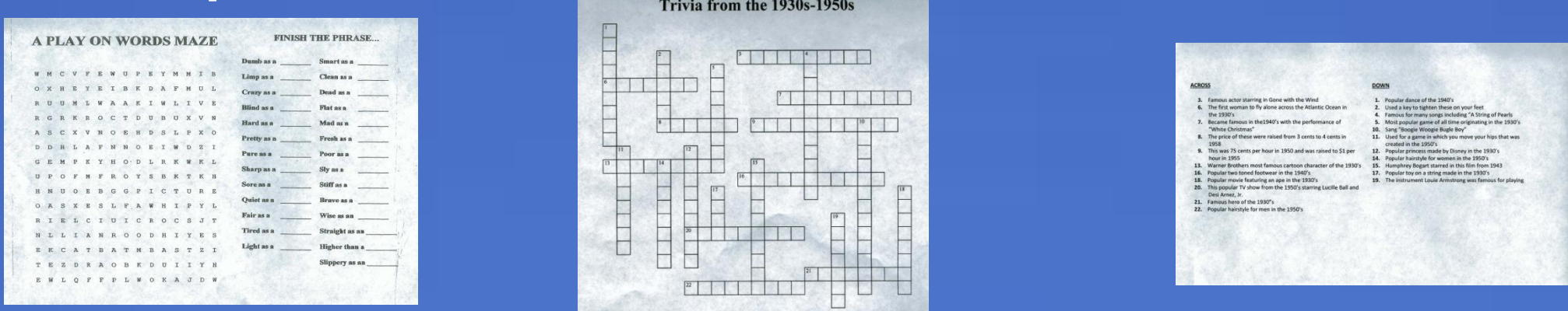
- ❖ A low-income subsidized apartment complex in a western Wisconsin community

## Memory Enhancement Activities

- ❖ Week One—Music bingo consisting of popular music from the 1920's-1950's
- ❖ Week Two—Category word game consisting of associating a phrase with a letter of the alphabet



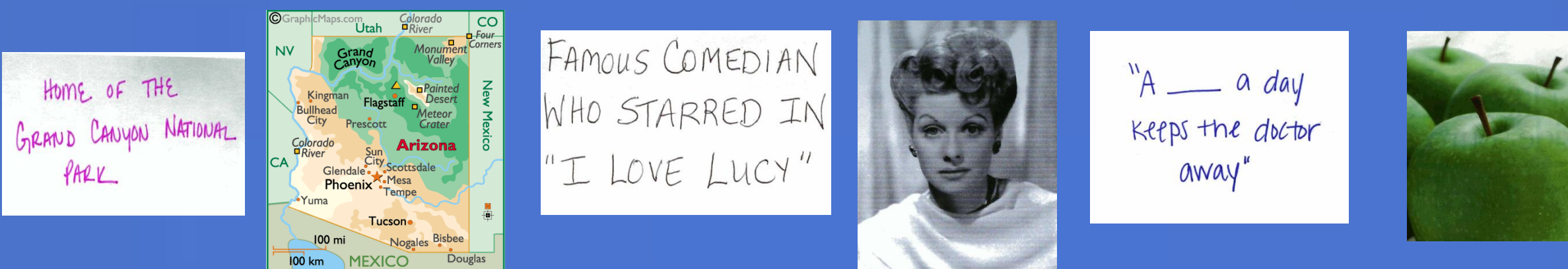
- ❖ Week Three—Crossword puzzle consisting of clues from the 1930's-1950's and a word maze of common phrases from that same era



- ❖ Week Four—Bingo trivia consisting of an assortment of current events, slogans, sports activities, animals and country recognition



- ❖ Week Five—Three matching games consisting of states, famous people and item recognition



## Results

Participant	Subjective Questions	Face Test		Picture Test		Word List	
	After (improvement in)	Before	After	Before	After	Before	After
1	5/6	5/5	5/5	3/5	3/5	1/7	5/7
2	2/6	1/5	1/5	4/5	3/5	5/7	7/7

- ❖ Two of the original three participants completed the post-test due to a change of residency for the third participant.
- ❖ Due to limited number of participants, results were inconclusive. If sample size was larger, we would anticipate results similar to the original research study, based on comments of participants who did not participate in data collection.
- ❖ Participants enjoyed themselves, evidenced by their communication and laughter and verbal expressions of having fun. Memory enhancement was evident as members would point out how much they could remember from the past. Participants had opportunity to enhance memory while socializing, creating opportunities for further mind stimulation.
- ❖ As time progressed participants became more engaged in the games and with each other. Because of the entertainment of the games, participants attempted to get others involved.

## Limitations

- ❖ Sample numbers were low so results cannot be generalized
- ❖ Lack of control group
- ❖ Subjective questions left open to interpretation by both participants and researchers
- ❖ Convenience sample could lead to bias

## Recommendations

- ❖ Larger sample size is needed
- ❖ Because it was difficult to interpret results due to open ended questions, use a scale of 1 - 5 for the subjective questions. 1 - the situation never occurs, 5 - the situation always occurs.
- ❖ A control group could be utilized by asking residents not wishing to play the games to take the pre and post test.